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TULAREMIA, AN ANIMAL-BORNE DISEASE

Prepared in the Disease Investigations Unit, Division of Wildlife Research

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INTRODUCTION

The disease tularemia has assumed such proportions in the United States that the Fish and Wildlife Service is constantly receiving requests for information on its nature and on the procedure recommended by field representatives of the Service in their work with the public. Such information is summarized in this leaflet.

The information on human infections presented and the recommendations made have been endorsed by the United States Public Health Service.

NATURE AND HISTORY OF THE DISEASE

Tularemia is a plague-like disease of rodents and is transmissible to man. It was originally discovered in ground squirrels in California in 1910 by Dr. G. W. McCoy, of the United States Public Health Service. Later (1919) it was found in jack rabbits in Utah, in the work of Dr. Edward Francis and his assistants of the Public Health Service, and was definitely established as the debilitating, disabling, and frequently fatal disease locally known as "deer-fly fever," which was affecting residents and visitors locally in rural districts in Utah.

NOTE.-- This leaflet supersedes Wildlife Research and Management Leaflet BS-5, issued by the Bureau of Biological Survey, United States Department of Agriculture, in April 1935.

Positive diagnosis of the disease, isolation of the causative organism Bacterium tularense and development of a successful cultural technic were important steps in the history of tularemia and of investigations of wild animals as carriers of this disease. Later work has disclosed human cases of the disease in all parts of this country, as well as in Canada, Europe, and Asia, and it has been definitely established as identical with the rabbit-borne malady known as Ohara's disease, which affects people in Japan.

Discovery of tularemia has cleared up many puzzling cases of illness that in the past have doubtless been wrongly diagnosed as "flu," septic infection, blood poisoning, or other kindred diseases, because of superficial resemblances of the symptoms at some of its stages. Human cases have been traced to rabbits or other mammals or to birds in the locality or to shipments of diseased animals for sale in public markets. This specific knowledge lays the foundation for intelligent action in maintaining essential safeguards and in protecting the public in the handling of important game animals.

Among game animals tularemia occurs in nature in cottontail rabbits, jack rabbits, snowshoe hares, and is responsible for some of the periodic epizootics that kill them off locally in great numbers. This provides a reservoir for infection of both wild animals and human beings. The disease is carried from animal to animal by ticks. Ticks carry the infection through the winter, and the female may transmit it through the eggs to the next generation. Man usually becomes infected by handling rabbit carcasses, as in dressing them for the table or cutting them up for such purposes as feed for dogs, hogs, silver foxes, or chickens, or as bait for fish or such carnivorous animals as coyotes. He may also become infected by bites of flies and ticks or by handling or crushing infected insects.

SYMPTOMS IN MAN

Tularemia is likely to manifest itself in man first by pain, tenderness, and swelling of lymph glands draining the region where the infection has entered, as those of the elbow or armpit when infection is through the finger, or those of the face and neck when infection is through the eye. These symptoms will probably appear within 2 to 5 days after infection. An inflamed and painful ulcer may soon develop following an insect bite, or at an abrasion in the skin where the infection gained entrance. This may be accompanied by sudden onsets of headache, aching pains, chills, prostration, general weakness, and fever. In some cases no external lesions are found. This is true in those instances where ingestion or inhalation of infective material gives rise to cases of typhoidal or primary pulmonary types of tularemia. Determination of the presence of infection may be made by isolation of the causative organism or by a specific blood test.